APPLE INC.

IPHONE OS 4 LAUNCH

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SF	=	Scott Forstall
T	=	Tim Westergren
D	=	David Ponsford
Q	=	Question from press
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S   Good morning. Good morning. Thanks for coming this morning. We've got something to share with you that we are pretty excited about and that is iPhone OS 4, the next generation of the most advanced mobile operating system in the world. Before we get to that, though, I've got a few updates on a few interesting topics.

The first one is, of course, the iPad. We just started shipping it on Saturday. Before we shipped it, we got some really great reviews. This is a quote from Walt Mossberg's review that I just love: "After spending hours and hours with it, I believe this beautiful new touch screen device from Apple has the potential to change portable computing profoundly." Walt's a pretty tough critic and I thought this was a pretty amazing thing he said.

Ed Baig, *USA Today:* "The iPad is not so much about what you can do—browse, do e-mail, play games, read e-books and more, but how you can do it. That's where Apple is rewriting the rule book for mainstream computing." He also said something a little simpler, which is: "The first iPad is a winner. [laughter]

Now, the first day, Saturday, we sold 300,000 iPads and I wanted to give you an update as of today, we have sold about 450,000. [applause] I'm told Best Buy is out of stock. Our retail stores, they are getting them in and selling them right out so they are kind of hand-to-mouth. We are making them as fast as we can. Our ramp is going well but evidently we can't quite make enough of them yet so we are going to have to try harder.

IBooks. Users downloaded over 250,000 iBooks on the first day and as of today, just a few days later, they've downloaded over 600,000, which is great, and we've gotten just tremendous feedback, really positive feedback on iBooks.

And the first day iPad apps, users downloaded over a million iPad apps. We were just thrilled with this. And as of today they've downloaded over 3.5 million. So again, [applause] this is going like this.

But, beyond all the numbers, what it was really about for us was this. [laughter] This is some photos taken at one of our retail stores. People are just loving this product and, as you know, when you create something, you really have butterflies in your stomach, right, before you put it out into the world. You really don't know if people are going to like it

or not and so far people really seem to be loving it. So we are feeling pretty good about it. So that's a little update on the iPad.

Now I'd like to talk for just a minute about the App Store. We have…users have downloaded well over 4 billion apps, well over 4 billion apps to date, and we have over 185,000 apps in the App Store now so, again, we've had some of our biggest days ever with new apps going into the App Store in the last few weeks. It's accelerating.

And we have over 3,500 iPad apps in the App Store, so this is also accelerating.

And these apps on the iPad are just amazing. This is the App Store on the iPad, and I just want to show you some screen shots of some of the apps because you'll be…if you haven't seen these, you'll be surprised at how great they are.

So some great games—Scrabble, Labyrinth—some wonderful games. Toy Story, read-a-long books from Disney. This is "Miss Spider" and a really popular book among young kids.

We've got some awesome driving games. The driving games are terrific. This is an app that actually lets you follow a real race on the terrain as it's happening.

We've got Zillow, a real estate application that lets you find all the houses for sale and actually go inside and see pictures of them.

Comics. Marvel has got a great comic book app that lets you buy comic books right from in the app. It's fantastic.

Weather, the universe [laughter], major league baseball. Fantastic app for major league baseball. Great app from ESPN.

"Epicurious" for recipes. Teaching all of us how to make food.

E-Trade.

This is a fantastic app from IMDb. You can just learn so much about movies, if you love movies, from this app. It's fantastic.

ABC turned out a phenomenal app for the iPad. It shows all of their shows and you can just stream them right on the iPad. You can turn it sideways and just watch these shows in incredible resolution. They are fantastic.

Reuters. We've got a lot of news apps—Reuters, *The Wall Street Journal, USA Today, The New York Times, Time Magazine.* This is a cool app—*Guardian Eye Witness.* This basically says rather than text, let's give you the day in pictures and it's really nice. And, of all of the futuristic magazines out there, *Popular Science* is king of the hill. These guys did something really, really breakthrough and if you haven't seen it, it's really worth taking a look at.

And Netflix. This app has been highly praised. People love watching the free movies on it, if you are a subscriber to Netflix, and the quality of the video is very nice.

And where would we be without an Accordéon? [laughter] So a lot of apps. [applause]

That's just a few of the over 3,500 iPad apps and the over 185,000 apps on the App Store.

Now, let's get to the iPhone. We had a really nice thing happen recently. We won the J.D. Powers Customer Satisfaction Award for smart phones for 2010 but it's not just for 2010 because we've actually won it for the last three years in a row. So we won it in 2008, 09 and 10.

Now, if we take a look at market share, one way to look at that is what's the share of use? What's the U.S. mobile browser usage? A pretty good proxy and if you take a look at this, iPhone has 64% U.S. mobile browser usage share—64%—and everything else added together is half the iPhone. Everything else added together is just half the iPhone so it's pretty interesting. How many iPhones have we sold? To date we have sold over 50 million iPhones and, if you add iPod Touches into that, because they run the same apps from the App Store, over 85 million iPhones and iPod Touches. If you are a software developer, that is a plumb market to go after.

So today we are giving a developer preview of iPhone OS 4, the next major release of the iPhone operating system. We have been working on this for a while. It's pretty great and we are going to ship it this summer and we are going to release developer preview today. So let's get into it.

IPhone OS 4 delivers over 1,500 new APIs to developers. A lot of stuff that developers have been asking for. Developers can now access the calendar, the photo library, they have full access to still and video camera data. Quick look. They can put SMS inside their apps. We are releasing our automated testing tools, the same tools we use to test our apps to our developers so they can test their apps with them. And we are releasing a framework called Accelerate, which is in itself, actually, we don't count these APIs in the 1,500, over 2,000 APIs for hardware accelerated math functions. So if their application is heavy into math, they can really take advantage of this. And these are just a few, just a few of the over 1,500 APIs that they are going to have on iPhone OS 4.

In addition, there's over 100 new user features. Again, here's just a few of them. Users can now create playlists on their phone. We've added a 5X digital zoom in the camera app. You know how you can tap to focus when you are taking a still picture? You can now tap to focus on video. Every photo taken on the iPhone is geotagged and we've added places in the photo app now so you can see where they were taken. You can change the home screen wallpaper. It's been a huge request that we've gotten. You can use Bluetooth keyboards and we've added a spell checker, which is really nice. If you misspell a word, it will underline it and you can just tap it and it will give you what it thinks you might have wanted to type. You can gift apps. This has been a big request, too, so you can buy an app and gift it to somebody right from your phone. So, again, these are just a few of the end user features, over 100 of them, in iPhone OS 4.

Now of those, we are going to talk about seven today. We call them Tentpole features. We don't have time to talk about all 100 but we are going to talk about seven of them today. So let's get into it.

Let's start off with the first one which is probably going to be the biggest one and that is multitasking. [applause] Now, we weren't the first to this party but we are going to be the best. Just like cut and paste. Other people had cut and paste before we did but everybody I think widely believed that we just nailed it with the way we did it and it's much better than any other implementation. I think people will think the same about multitasking because it's really easy to implement multitasking in a way that really drains battery life. These apps start running in the background and there goes your battery. And it's really easy to implement it in a way that reduces the performance of the foreground app and makes your phone feel really sluggish. So if you don't do it just right, your phone is going to feel sluggish and your battery life is going to go way down and people have experienced that a lot. We figured out how to implement multitasking for third party apps and avoid those things and that's what took us a little longer but I think we nailed it.

So what I'd like to do now is demo it for you so you can see what it looks like for the end user. We've got a great user interface for it and I think you'll like it. So I've got a phone here with a cable to the projector and just slide to unlock. You can see I've got my wallpaper up there and I'm just going to go ahead and launch Mail right off the dock there and so here I am in Mail. I'm going to look at a mail message and this mail message has a URL to a Web site so I am going to go to that Web site and I just click on it and I'm taken to the browser, right? So far this is what we do every day on an iPhone. And here I am at this Mount Kilimanjaro Web site. Now I want to go back to reading my mail. I'm done looking at this Web site. What do I do? I can navigate back to the home screen and then click on Mail again, but rather than that, I can just double click the Home button and the window raises up and it shows me all the apps that are running. These are all the apps that are running. And I want to go back to Mail and I go right back to where I left it. I want to go back to that Web page. There I am right back at the Web page. Very simple. Very, very simple. [applause]

So now what I want to do is I want to go back to eBay to check on an auction I'm following. I can just tap on it and again I go right to where I left off in the apps. So here I am on eBay where I left off. I'm checking my auction and now I want to go play a game. Let me go play Tap Tap Revenge, and Tap Tap Revenge gives me a countdown. It keeps me where I was but it gives me a countdown of…[music playing]. All right, I'm not winning here. [laughter] Again, the game stops and I can say, "Great. Let me go back and look at Mail here." Check Mail out. I've been playing a game for a while. Oops. That was the Web site. Sorry. Let's go to Mail. There is Mail right there. OK. I don't have any new mail that I need to look at so let me go back to my game. And, again, it's going to take me right back to where I left off. 3-2-1 [music playing] Pretty cool, huh? [applause] And again I can go Home any time I want just by clicking the Home button again and boom I'm home. All right? Make sense? Really simple UI. Puts the icons of all the apps that are running right at the bottom where I can just flick them with my thumb right here and it's very, very easy to use, very efficient and we think users are going to love it. Also, you can see the new look of the dock right there and, again, custom wallpaper. So, that is our multitasking UI. It's really wonderful. We've been using it a lot and it really changes the

way you use the iPhone. You are bouncing around between apps just with tremendous fluidity. It's very, very nice.

So, to explain how we did this, while preserving battery life and performance, I am going to turn it over now to Scott Forstall, our Senior Vice President of iPhone Software. Scott. [applause]

SF   Thanks, Steve. So we are really excited about adding multitasking to apps in the App Store. How did we do it? How are we adding multitasking while preserving battery life and performance? Well, we looked at the tens of thousands of apps in the App Store and we distilled down the services that those apps need to multitask in the background and then we implemented all those services ourselves and did so in a way that preserves battery life and performance. And now, in iPhone OS 4, we are providing those services as APIs to developers so developers can add multitasking while the system preserves battery life and performance. We are providing seven multitasking services. Let me walk you through those now.

The first one is background audio. Now, there are a number of popular audio streaming apps in the store but none as popular as Pandora. With 50 million registered users, 13 million of whom stream their customized Internet radio stations right to their iPhones, Pandora is changing the way that people think about radio. And Pandora has a great application that a lot of our customers use but until now, if you left that application to go to another app, the music stopped. No longer. With iPhone OS 4 Pandora can continue to play music in the background while you switch between apps, and you can even use these iPod controls in the lock screen to control Pandora.

To give you a demo of how Pandora is going to take advantage of multitasking on iPhone OS 4, I'd like to invite up Pandora's founder, Tim Westergren. Tim. [applause]

T   Thanks. Thanks, Scott. Thank you Scott and thanks to Steve and the entire iPhone team. It's a real treat for us to share the stage with you today. I'm joined by our Chief Technology Officer, Tom Conrad, who will be driving.

It's no exaggeration to say that the iPhone has single-handedly changed the trajectory of Pandora. When we launched our app in the summer of 2008, we were on a pretty good run. We had over 10 million listeners and we were growing at a good clip but the day we launched on the iPhone everything changed. Suddenly I could take this little guy out of my pocket and I could peruse my personal radio stations or I could create one to suit my mood. I could plug it into my car dashboard or I could take it to the gym or I could even dock it at home to stream Pandora through my own stereo system. [music begins playing in the background] It was just a completely transformative moment for us because we suddenly became truly anytime, anywhere radio. Our growth rate almost doubled overnight and we now add over 30,000 new listeners a day just on the iPhone.

So what's the one thing that can make this app much better? Background listening. So when Scott asked us to come here today, we jumped at the chance. It took our developers just one day to make Pandora fully background aware and I'd like to show it to you now.

So let's say I'm on the train and I'm listening to my personalized radio station. Until now that's all I'd be able to do but with the iPhone OS 4 I can now head over to Safari, catch up on my newspaper reading. From my browser over to *The New York Times* Web site and peruse some of the latest headlines. Notice the performance of the browser even with Pandora running in the background. I see the conductor coming. Let me lock the phone and put it in my pocket for a second. Pandora keeps playing. And I can now control Pandora from the lock screen. Just a quick double tap on the Home button and up pop the controls. Let me skip this song. I've heard that song somewhere before. [laughter] I can't remember the name of the artist so let me go back to Pandora. Oh yeah. Matt Costa. I like this song. Let me buy it. I am going to buy it from iTunes. Notice that Pandora keeps playing. Twenty-five percent of the 120 million hours that we stream every day are streamed over an iPhone so we are already sending a ton of people to iTunes. Just imagine what will happen when this thing goes live.

So I could go through my whole train ride like this. I could read my e-mail, I could browse the Web, I could catch up with my calendar and all the while my personal soundtrack just keeps spinning in the background just like it was always meant to be. Thanks very much. [applause]

SF   Thanks, Tim. Pandora in the background. It's fantastic. Our next service is Voiceover IP. Now VoIP continues to grow in popularity led by Skype. Skype already connects more than 1 out of every 9 international phone calls made on the planet. It's amazing. They have a great app for the iPhone but the problem is up until now, if you left the app, the phone call ended and even worse, if you weren't running the app in the foreground, you couldn't receive Skype calls. But, again, all that changes with iPhone OS 4. Now, when you are on Skype, you can switch to another app and the phone call stays on. You see you get this double high status bar to show you are still on the phone call and, even when you are not running Skype in the foreground, when you lock the phone you can still receive Skype calls.

To give you a technology demo of how they can take advantage of multitasking on iPhone OS 4, I'd like to invite up Skype's Head of iPhone Product Development, David Ponsford. David. [applause]

D   Thanks, Scott. Thanks everybody who is here today. We are very excited to be here. I'm here with John Chang, our Lead iPhone Developer, who is going to help me demo the Skype app today.

Skype enables the world's conversations helping people make great quality free phone calls. In just six short years we've amassed over half a billion registered users touching almost every country on the planet. And now with iPhone OS 4 it's even more convenient to use Skype. Let's show you how.

This is the screen I see when I first go into Skype. I can see all my contacts and I can see those that are online with a green icon next to their name. And, of course, they can see that I'm online too. Now, until today, navigating away from the Skype app meant that I would go offline. The app would quit and I'd no longer be able to receive chats or calls from any of my contacts. However, with iPhone OS 4, when I leave the app, I go into background. Yet I'm still able to receive calls.

Let's say I want to go to one of my favorite games. I just double click the Home button, bring up the multitasking UI and go straight to it. Now, even though I'm in another application, I still look online to my Skype contacts because the OS is maintaining a network connection between my iPhone and the Skype account. Oh, look, Aaron is calling. Now, even another app, if someone tries to call me, I receive a notification and I can answer it with just one tap.

"Hey, Aaron, are you there?"

"Hey, David, how's it going?"

"Pretty good. Can you just hang on one second?"

"Yeah, sure."
Now, the notification you just saw was really simple to implement. Just a few dozen lines of code and we can play our own custom sound. By the way, we are piping the sound from this iPhone through the AV system here, kind of like a giant speakerphone. This is a real Skype call.
"Hey, Aaron, are you there?"

"Yip, I am. Hey, I was wondering if you were interested in getting some dinner tonight."

"Yeah, sure. I'll just go into an app and see if I can find some places."

OK, so you can see at the top of the screen there is a red status bar. This shows that the Skype call is still in progress even though the Skype app is no longer in foreground.

"I'm just looking up some places now, Aaron. How about we go to Abacus?"

"That sounds great. Actually, I always wanted to try that."

"Cool. OK, I'll send you the details in a few minutes. I just with some folks right now."

"OK, sounds good. I'll see you later."

"Bye, bye." So now I can choose to go to another application or I can just put the phone in my pocket. In either case, the app will be in background and I can still receive calls. Now, with iPhone OS 4, Skype is even more convenient and useful to everyone that depends on it every day worldwide. Thanks for having us here today. [applause]

SF   Thanks, David. So Voiceover IP, working in the background on iPhone OS 4.

The next service we have is Background Location. Now, there are two classes of applications that would like to use your location in the background. One, our turn-by-turn direction applications like TomTom. Now these applications want to continuously monitor your location using GPS so they can always tell you when to take the next turn. The problem is until now if you left an app like TomTom that it would stop tracking your location and stop giving you directions but now with iPhone OS 4 you can be getting

directions from TomTom in your car, listening to your music [music playing in the background] right from your iPhone and it's still in the background giving you directions. [driving directions being given in the background] So it can continue to track your location continuously with GPS in the background.

Now, GPS uses a fair bit of power and something like TomTom which uses it all the time and that's OK for an app like this because it's generally used in the car when your iPhone is plugged in and charging.

But there's another class of applications that also wants to use your location but it isn't used when you are plugged in and charging. These are social networking applications like Looped and we came up with a great solution for these apps that doesn't require GPS to be on all the time. And for that we use cell towers. Now it turns out our base band is always connected to a cell tower. It's the way you receive phone calls and it knows when you've moved from one cell tower to another and if you've switched cell towers, we know you've moved location as well. So we are sitting there with very low power always listening to it and we know you've moved locations, normally 500 to 1,000 meters to switch between cell towers. We can then wake up the application and tell it your new location and it can tell all of your friends. So that's background location.

Now, for all these location things we take privacy very, very seriously. Ever since we added the first APIs for location we would put up a panel whenever an application wanted to use your location and the user would have to approve this. We are taking privacy several steps further in iPhone OS 4.

First, we are adding an indicator right on the status bar to let you know if any application is asking for your location, be it a foreground application or one of the background applications, so you can know if something is tracking your location.

Next, we are adding fine grain settings so you can see all the applications that would like to use your location and the user can enable or disable location per application.

And on top of all of this, if any application has asked for your location in the last 24 hours, we will add an indicator right next to that app so you can know that it has asked for your location. So we are being completely transparent on the usage of location and we are letting users set on an app-by-app basis the ability for apps to use location. That is background location.

Next, push notifications. Now we've had these for about nine months now. They are incredibly popular. They are great for things like scoring updates, news alerts, people challenging you to a game, so they are incredibly popular. In fact, in just nine months we've pushed more than 10 billion notifications. Here's how it works.

A third party sets up a server. They send their notification to Apple's push notification server and then we sent it to the phone and we can do this with very low power because we are always connected. We have a single connection to the phone and we will coalesce multiple notifications from multiple sources through this one connection to the phone. So that's push notification.

Now building on push notification we are adding a new service which is local notifications. Local notifications are just like push notifications except you don't need a server. It can all be done right on the phone. So, for instance, let's say you have a *TV Guide* application. It wants to alert you, give you an alarm, when your favorite television show, *The Colbert Report*, is about to start and it can do all of that with local notifications. So that's local notifications.

Next, task completion. There are some apps that take a while to complete an operation like Flicker. If you start uploading photos to Flicker, it takes a little while to do that and until now, if you left the application while it was uploading the photos, it would stop. With task completion, Flicker can continue to upload those photos in the background even after you switched away from it or to another application.

Our last service is fast app switching. This is probably the easiest for developers to adopt and probably the most important. Fast app switching is what allows an application, when you are running it and switch away, to store all of its state and move into a quiescent state in the background so it's not using any CPU at all. So let's say you go from Tap Tap to Mail and then when you go back to that game, or whatever the application is, it's instantly exactly where you left it. There's no need to launch the application, there's no need to restore the state, restore where you are in the game. Everything has been preserved and you are right back where you were.

And these are our seven services for multitasking. They are very, very deep and provide a lot of power for developers to add multitasking to their apps.

To go along with all this we have this incredible user interface. It makes it incredibly simple and fast for you to switch between applications. And that is multitasking which is our first tentpole for iPhone OS 4. I'd like to hand it back to Steve. [applause]

S   Good job. Thank you, Scott. So, our second tentpole. This is one where we've also gotten a lot of requests. Folders. As people are downloading more and more apps they are having to flick from page to page to page to find them. They want to organize them. They want a better way to organize them and a better way to find them and Folders fit the bill. Rather than talk about it, let me just show you what they look like.

We came up with a really beautiful implementation—Folders. So let me go to my second page over here full of apps and I want to make a folder with games in it. I have several games and it would be nice if I could put them in one folder to keep them altogether and make it real easy to find. So what I do is I just push my finger on an app just like I do to move it and they start to jiggle and I just drag one app on top of another and it instantly makes a folder. [applause] Now, it also automatically names the folder based on the category that these apps came from from the App Store. I can rename it anything I want but if I don't want to bother, I just use the name that it intelligently selects and that's Folders right there. So let me put a few more apps in. I can just drag apps in there and you can see the icon actually changes as I drag apps in. So now I've got a folder with my games in it and there they are and I just tap on one to launch it. [applause] I can drag this around to anywhere I want, right, and I can have as many folders as I'd like. I can also even…let me go ahead and make space in the dock. I can

even put a folder in the dock so that I have it now wherever I am. Whatever homepage I'm on I've got my games with me. Really nice.

Now, one of the other things I wanted to show you, it's not really about folders, but it's about the home screen, which is the ability to change the wallpaper. It's really nice, so let me go into Settings and Wallpaper and I've got a camera roll with some wallpaper on it and I can just change it very easily. I can say, "Let's pick this one." I can set the home screen to this or the lock screen or both so I am going to just set both to that and now you can see I've changed my wallpaper. Oops, sorry. And, again, you can see my folder is right there. I can use multitasking. You just go right back to Settings, exactly where I left. Let's pick denim. There we go, and again, folders, and right back where I left again and let me pick one more. So there you go. And that's how easy it all is. So, that is Folders, [applause] an incredibly great drag and drop UI with intelligent naming and you used to be able to see 180 apps in your phone over those 11 pages. If you replaced every one of those with a folder, it's now over 2,000. [laughter] So for the person that likes to download a lot of apps, we have a solution. So that is tentpole number 2, Folders.

Now let's go to tentpole number 3. Tentpole number 3 is an enhanced Mail. We've added a lot of great features to mail, a lot of suggestions and requests from our users that we've been able to get into this new Mail in iPhone OS 4. The first, unified in-box. Customers have really wanted this so that you can have multiple e-mail accounts, say a MobileMe one, a Yahoo one, an Exchange one, and all the incoming mail will be put into one in-box so you don't miss anything. And we've made it so you can have more than one Exchange account as well which has been another big request. So all of that in the new Mail client—unified in-box.

Now, if you want to focus on just one account, we've added fast in-box switching, so with just a few taps you can move between one in-box or another if you just want to focus on one.

In addition, we've added the ability to organize by thread so you can follow e-mail conversations and conversations and discussions much easier. So as an example, we'll look at the second message down. You'll see that it's got a three and a double chevron right there. That says there's three messages inside there and when we go in there, you'll see the three messages. The most recent one on top that hasn't been read yet but you can follow that conversation all along by easily looking at the prior messages. They are all bundled in one place organized by thread.

And, open attachments, the ability to get an attachment in an e-mail, tap on it and open it with an app from the App Store. This is really great. In this case it's Omnigraph and I can just tap it and it will open with the app.

So some new features in Mail. There's lots more but the biggest ones are the unified in-box with multiple Exchange accounts, fast in-box switching, threaded messages and you can open attachments with apps. [applause]

All right. So that is number 3. Let's go to number 4. For iPhone OS 4 we are adding iBooks. We have a great iBook reader for iPhone OS 4. This is what it looks like. The same bookshelf that we rolled out in the iPad and the same iBook Store online book store. We

are really excited about this. We've had a lot of…even just since rolling it out on the iPad we've had so many requests to bring this to the iPhone and of course we were doing that. And it's just a great experience for reading. That's what it looks like on the iPhone. There's "Winnie the Pooh." And so we think customers will really enjoy this on their iPhone or iPod Touch. It's a delightful e-book reader. With the iBook Store online book store you can buy your books once and read them anywhere. In other words, you can buy it for the iPad and you can transfer it on to your iPhone or vice versa. You just have to buy it once and you can read it on any of your devices. We are going to be wirelessly syncing your current page and bookmarks between devices automatically and, just like we do on the iPad, we are going to supply a free book [laughter] and we think "Winnie the Pooh" is a good choice. [applause] We labored over that with the iPad. What is the book that we could supply just to get people started that we really felt great about? And "Winnie the Pooh" won. [laughter] So, that is iBooks and it is our fourth tentpole.

Now I'd like to turn it back over to Scott for tentpole number 5.

SF   Thank you, Steve. So our fifth tentpole are some great features for enterprise. Now the iPhone has made huge inroads in enterprise. Already more than 80% of Fortune 100 companies are using iPhones and so we have some really nice features here starting with even better data protection. So now in iPhone OS 4 we will encrypt all of your e-mail, including all the attachments with your PIN code so better encryption in e-mail. And we are making APIs available so developers can encrypt all the data inside their app as well. So great data encryption.

Next, mobile device management. This has been a huge request. There are companies out there like Sybase and MobileIron and a number of others and they build these enterprise solutions for deploying large number of phones to companies. Well, we did the work in iPhone OS 4 to enable those solutions to also manage the deployment of iPhones. So this is a big one. Mobile device management. [applause]
Next, wireless app distribution. [applause] So a lot of companies are building custom applications and until now the employee would have to plug into iTunes to get those apps but no more. With iPhone OS 4 that company can wirelessly distribute these applications anywhere in the world from their own servers. So wireless app distribution.

Next, as Steve mentioned, we are adding support for multiple Exchange accounts on a single phone. And, we've added support for Exchange Server 2010. We've also added support for SSL VPN for both Juniper and from Cisco, so some great enterprise features in iPhone OS 4. And that is our fifth tentpole. [applause]

Our sixth tentpole is Game Center. This is a developer preview in iPhone OS 4. Gaming is extremely popular on the iPhone and the iPod Touch. In fact, we have more than 50,000 game and entertainment titles on the App Store. Let's compare that to the competition. If you look at dedicated gaming devices like the Sony PSP and Nintendo DS, we just blow them out of the water with more than ten times the number of game and entertainment titles as either of them. We want to make gaming even better on the iPhone so we are adding a social gaming network. This allows you to challenge your friends to games. This is what it looks like when one of your friends is inviting you to play a game.

We also will do automatic matchmaking so if you are playing a game and it requires four people to play, we'll automatically find three others of a similar ability to you in that game and put you all together into the game. You can compare how you are doing against your friends and against the world with leader boards. And, you can see how you are progressing through a game and compare yourself against your friends with achievements. So, Game Center. It's a social gaming network where you can invite your friends, match make, compare yourself with the leader boards and achievements. It's a preview on iPhone OS 4 and it will be available for everyone later this year. And that is Game Center which is our sixth tentpole. I'm going to hand it back to Steve. [applause]

S   Thank you. So, our seventh tentpole is called iAd. It's mobile advertising. We are building it right in to iPhone OS 4. Now, what's this about? Well, you know, we have 185,000 apps on the App Store created by tremendous developers. A lot of those apps are free and the rest of them are really reasonably priced. You've got apps for free, for 99¢, for $1.99 and we like that. Users like that but these developers have to find a way to make some money and we'd like to help them. Now what some of the developers are starting to do is to put advertising into their apps and, for lack of a more elegant way to say it, we think most of this mobile advertising really sucks [laughter] and we thought we might be able to make some contributions. So this is what this is all about. It's all about helping our developers make some money through advertising so they can keep their free apps free. Now, when you look at a mobile device, a phone, it's not like the desktop. On the desktop search is where it's at, right? That's where the money is. But on a mobile device search hasn't happened. Search is not where it's at. People aren't searching on a mobile device like they do on a desktop. What's happening is they are spending all their time in apps. When people want to find a place to go out to dinner, they are not searching. They are going into Yelp. They are using apps to get to data on the Internet rather than a generalized search. And this is where the opportunity to deliver advertising is, not as part of search but as part of apps. Now, the average iPhone user spends a little over 30 minutes every day using apps, over 30 minutes every day using apps on their phone. Now, if we said we want to put an ad up every three minutes, let's say, that would be 10 ads per device per day. Ten ads within 30 minutes is about the same as a television show. Right? We are going to soon have 100 million devices. That's a billion ad opportunities per day in the iPhone community and the iPod Touch community. One billion ad opportunities per day. This is a pretty serious opportunity and it's an incredible demographic but we want to do more than that. We want to change the quality of the advertising as well.

Now, we are all familiar with interactive ads on the Web, right? That's what they look like. And they are interactive but they are really not capable of delivering emotion, which is why the majority of ad dollars still flow through television because advertisers can deliver an emotional message through television, right? We know what that's like.

What we want to do with iAds is to deliver interaction but also deliver emotion so interactive ads have no emotion, some interactivity, and television ads have a lot of emotion but no interactivity and we want to be here. We want to be even more interactive than the ads you see on the Web and we want to get some of that emotion from video. So that's what iAd is all about. It's emotion plus interactivity. The ads keep you in your app. Now what's that about? On mobile devices today, when you click on a banner ad, it yanks you out of your app, throws you into a browser and takes you to the

advertiser's Web page. You may never find your way back to your app [laughter] and it's almost impossible to get back to where you left off so what's the result? People don't click on the ads. Who wants to get yanked out of your app? Because iAd is in the iPhone OS itself, we have figured out how to do interactive and video content without ever taking you out of our app and the user can return to their app any time they want and so we think the result is going to be people are going to be a lot more interested in clicking on these things because they are not going to pay the penalty of having to find their way back to their app. So it's built right into the iPhone OS and for developers to add this to their apps is really simple. They can add iAd opportunities to their apps in an afternoon. Apple is going to sell and host the ads and we are going to give developers an industry standard 60% split of the revenues. So I'd like to show this to you.

Now, what we've done is we've mocked up a few ads. We don't have any real ads yet because this isn't rolled out yet, and what we've done is we've taken a few brands that we love and we've made some ads for them basically. Oh, excuse me. Now, these folks are not endorsing us in any way. They haven't even seen this stuff. We just love these brands and use them to make some fun apps.

So let's say this is an app that gives me some entertainment news and at the bottom I have a "Toy Story 3" banner. "Toy Story 3" is an awesome movie that Disney is putting out in June. So I click on that banner. I've seen it. it's really good. [laughter and applause] So you click on the banner and we take over the screen. The ad takes over the screen, comes down with animation. All this stuff is done in HTML5 by the way [laughter and applause]. It's really easy to do and you see animation and everything else. Now you see that X up at the top there? If I just tap on that X, I go immediately back to my app right where I left off. So the user at any time can say, "Take me back to my app." This disappears and I'm back in my app.

So let's go explore this ad, which is really kind of a universe here. So I can listen to the characters. And I've got some videos here. Again, this is a little HTML5 gizmo that is made available to developers and they can make their own stuff like this, too. It's real easy. And so I'm going to just pick a video here. [playing video] And, of course, if I wanted to I could just turn this 90 degrees and watch it this way. All right I guess I have to say, "Play." [playing video] And, again, this is all stream video right on to the phone.

And they've included a game in this ad, well we've included a game in this ad, [laughter] and so here we go. It's a simple game and I get to look and see where things are so that's fine. I'm not very good at these things usually but I…so there we go. All right. [laughter and applause] Oh, all right. Anyway, this is good. [laughter] So I've got a game. I've got posters and I can just tap here and have them as wallpaper so, again, the advertiser can just give me some wallpaper for my phone and users like free stuff.

Theaters, if I want to see where the movie is playing, there it is right there. We know our location. There's a theater and so I've got my location. And there's a "Toy Story" mania game that I can buy right in this ad. I don't even have to go to the App Store. The ad can sell me the game right here and I can push this button and it will download right on to my phone. So this is an example of a new kind of mobile ad. Have you ever seen an ad like this? You know? Any even close? [laughter] It's amazing.

So let's go look at another one. I've got one here that's Nike. We love Nike and we made this ad up for their Air Jordan shoe. Again, none of these are endorsing us in any way. We just love their brands and love their products. So this goes right into a video. [showing video] Pretty cool, huh?

So I can look at design or some photos but I'm going to show you this cool thing—history here—and, again, somebody built that little navigator. Very simple. So this is the history of the shoe starting in 1985 and you can just flick through the different years and see how the shoe has evolved each year if you are really into this stuff and a lot of people are. You know? So again, you can just see the shoe progress throughout the years. Pretty cool.

So let's go back and here's a Nike ID. This is a really cool program where you can make your own shoe. Nike has been doing this for a while and it's great. It says, "Shake your iPhone for more examples." So I shake my iPhone and get another one. Shake my iPhone, get another one. And, there's an app right here—Nike ID—that I can download to my phone and it lets me build these custom shoes and order them from Nike right here on my phone. And, if I want to find a store that's carrying these nearby, again it will find my location and put up some places that carry the shoes. So that's an example of what a Nike ad could look like.

And here's another one. This one for Target. Target is awesome and time to get inspired. Again, you can have animation bringing these things on. I just click on it. It takes over the screen again. Back to school. [playing video] So I can play that again or I can build my own dorm room, let's say, so let's see what that's like. I am a dude [laughter] who is in to fashion, skateboarding, music, sports. I'm going to say music maybe. Music and I'm going to Baylor, Berkeley and I pick my school—Michigan. [laughter] So let's build my room and it's going to put up all this stuff that they carry. This Michigan furniture here. I want a beanbag chair, let's say, and I want a wall clock. And I want, let's say, a Michigan rug. And, again, I can just look at my shopping list here and it shows me everything and I can just go buy it if I want to. I can find a Target store either near me or near my school because I don't want to lug all this stuff back there. It's that simple. And, again, I can return to my app any time I want. So that's an example of three ads that are very easy to make, right? And in addition to ad agencies being able to make these things, there are hundreds of thousands of iPhone app developers that know how to make those things. So we think this is going to be pretty exciting. Emotion plus interactivity. The ads keep you in your app so you are much more likely to click on them and want to go explore them because you can always get back with just a touch. They are built into iPhone OS —iAd is, the framework is—so it's really easy for developers to add iAd opportunities to their app. Apple will sell and host the ads and the developer will get the majority of the revenue. So that is iAd and that is our seventh tentpole. [applause]

So, let's review: multitasking, folders, dramatically enhanced mail client, iBooks, much deeper enterprise features, a preview of GameKit, and iAd, and these are just seven of the over 100 user features and over 1,500 new developer APIs in iPhone 4.

Now, we are releasing a developer preview today. Developers can start testing it now, can start using these new APIs now to enhance their apps, and you can get it today at developer.apple.com. We are releasing it to end users for iPhone and iPod Touch this

summer and that's for the iPhone 3GS and the iPod Touch third generation. That is, iPods that we shipped last fall in 32 and 64 gigabyte models and they will run pretty much everything. And for iPhone 3G and iPod Touch second generation they will run many things but there are some things they will not run because the hardware doesn't support them like multitasking. So iPhone 3 and iPod Touch second generation will not support the multitasking. The hardware just can't do it but iPhone 3GS and iPod Touch third generation will support everything you've seen today. So summer.

And we are bringing iPhone OS 4 to the iPad this fall. All these features on the iPad. So, that's iPhone OS 4 and I really want to thank you for coming today. What we are going to do now is have a short break and I'd like to ask the press to remain because I'm going to invite a few of my colleagues up and we are going to have a Q&A starting in about five minutes.

So thank you very, very much for coming and I think you are going to be very pleased with iPhone OS 4. Thanks. [applause]

OK, we'd love to try to answer some questions that you might have. This is Phil Schiller, Senior Vice President of Product Marketing, and Scott Forstall you met, Senior Vice President of iPhone OS Software. So we'll try to answer any questions you have. Yes.

Q Hi. Susan Kavorkian from IDC. I'm wondering, given that multitasking will promote increased data usage on a per user basis, how is AT&T prepared to compensate for greater data usage with its network?

S I'm not sure that's an accurate assumption. Remember, data usage requires attention and we are not multiplying the number of minutes a user is going to spend on their phone by adding multitasking. So I'm not so sure that assumption is correct. We'll find out. We'll be glad to tell you.

Q But, for example, if you are running Pandora and simultaneously running another application on iPhone…

S Right. Pandora doesn't use so much data. It's video that uses lots of data.

Q But nevertheless, you are using more data when using more applications and stuff at the same time, even if it's incrementally more, and AT&T has already struggled to support…

S Again, I don't think your assumption is really accurate. It might be but there is nothing to suggest that it is. Video uses lots of data but having something running in the background, you are not going to watch a movie that's running in the background. I'm not so sure. We'll let you know when we find out but I'm not so sure it's going to increase data usage at all. We'll see. Yes.

Q Eric **Bonart[sp??]** with *CT Magazine* in Germany. The wireless app distribution, you explained that as an enterprise feature, but I was wondering if that opens an avenue to distribute apps without going through the App Store.

S   No.

Q   How is it accessed then for people that are free to use it?

SF   We have a program where enterprises can build custom applications and they assign them with a certificate that comes from that enterprise and those apps only run on the phones of that enterprise so all this does is, while the exact same apps that could have run on those devices before, to be distributed wirelessly but it doesn't open up any additional devices that those can run on.

S   Yes, sir.

Q   Mateos Germany. Given the huge demand in the U.S. for the iPad, does it impact in any way the international launch?

S   No. We've said the international launch will be near the end of April and it's going to be near the end of April. Yeah, sir.

Q   Hi. I'm Andrew Padalski with slidetoplay.com, a gaming iPhone Web site. Will the social gaming network from Apple supplant the open faint Angimoko social gaming networks that are already available and what will the Apple social gaming network do differently from these?

SF   A lot of developers have come to us saying there are a bunch of different social networks out there and the problem was when you want a social network, the most important thing is that your friends are on it, and so our goal with this is build something into the platform where everyone can unify and everyone can be on the same social gaming platform. So if you are playing five different games, you don't have five different social networks. So we expect that developers will build in this as their social network because it will be built in.

S   There's no money to be gained or competitive advantage to be gained from having your own social gaming network so everybody should just say, "Great, less work for me plus I get a wider audience."

Q   But there are several companies that have built up very popular social networks.

S   And some of those are the ones that asked us to do it.

SF   Their goal is building great applications and they thought that a social network would help their applications. We are going to build the best social network ever for them so they can build incredible applications that get to everyone.

Q   One more question. Are there going to be Xbox lifestyle achievement points that build up over time to unlock games?

SF   So there are achievements as far as there's many different kinds of achievement points and we are still looking at the different options for them.

Q   Thank you.

S   Yes, sir, right there.

Q   Hi. Brian Thomas, cn.com. You guys will be hosting the ads. Is there going to be an approval process that also goes along with that much like the App Store has?

S   I think there will need to be some boundaries like you can't run any ad on ABC. I'm sure there are some ads that we'd rather not run but the concept is these advertisers are paying to run ads and they are probably going to run ads that are going to be well received by the audience, otherwise they are wasting their money. I'm not sure it's going to be anything other than a light touch and hopefully we'll never have any ads submitted that we would have to reject.

Q   Just one quick question. There was no mention at least of iPad support. Is that something that will be seen with the iPhone OS in the future? There was no mention of compatibility yet.

S   You mean for iAds?

Q   I'm sorry, just for iPhone 4.0 OS. You showed kind of supported devices but did not mention iPad.

S   No, actually, I did have a slide on it. I'm sorry if I didn't hit it hard enough. IPhone OS will be on the iPad this fall.

Q   Thank you.

S   Sir.

Q   _____[inaudible name 70:40], *Info World*. Is there going to be any change in Apple's position as far as running Java or Flash on iPhone OS with version 4?

S   No. Yes, sir.

Q   Jason Snell from *MacWorld*. I have a question about the iAd. The development of these rich iAds, is Apple going to be providing a development environment so that people in agencies and companies can create these iAds?

S   It's not going to be necessary. This is all just industry standard HTML5. The video, most of these companies already have video that they'll repurpose for these ads.

Q   So they can choose their tools that they prefer, as long as it's HTML5?

S   Absolutely, as long as it's HTML5.

Q   All right. Thank you.
]

S   Yeah. And again, one of the nice things about this is there are hundreds of thousands of iPhone app developers so there's a lot of folks out there that know how to develop here and that's a great resources.

You know, the ad agencies we've talked to, a few ad agencies including our own about this, and they are super excited about it because they've been wondering how ad agencies embrace this new digital world because so far the digital ads haven't been rich enough to warrant having a world-class ad agency. They haven't been able to express enough in these ads and for the first time they are seeing how to bring their storytelling skills to digital ads and they are really excited about it and they are really excited about going and hiring, at least our agency is really excited about going and hiring a bunch of technical people to create these types of ads and combine them with their storytelling people that do the advertising today. So I think this could be a whole new avenue for the advertising industry because for the first time you can really start to take advantage of the great pool of skills that a great ad agency has in the digital world. Sir, on the end there. Yeah.

Q   Hi. Josh Tapolski from Ang Gadget. Two quick questions. The first one is about the new background in APIs that you are adding. You don't seem to be supporting anything that would allow somebody to keep track of something like a Twitter timeline or an IM conversation in the background. Those are two things that I use all the time. Is there a reason why you are not providing some way to let people keep track of…? A timeline, for instance, is something that when you check back in four hours later you lose your place. Happens in apps on the iPhone all the time. And then I have another quick question after that.

SF   There's a few things in there. We believe that a lot of things like Twitters and stuff works better with push notifications to get ones that you care about, right, so something is being sent to you, push notification is exactly the right thing. It works even if you have never launched that app from the time you booted the phone and we keep the connection for it.

As far as saving your state, all of the fast app switching, I mean, this is a very shallow version I give you here. The technology is much, much deeper and developers will learn it as they read the documentation. The things we do when you are fast app switching is save all the stayed away and then we can look to see if there's memory needed and if another app is using a lot more memory, we can actually offload some of that memory on to the flash and bring it back in without the app ever having to worry about it so it's actually very, very deep.

For an app like that where you want to go back in and see exactly where you were, the app can store exactly the stakes. It knows where it was. As soon as you get back in, it can pull in all of these new feeds. You are actually told when you are going to be pulled in and so it can actually do things like tell you what the splash screen, the first one that comes in, should look like so it looks as if it was running, so there's a lot of stuff in there.

Q   So will OS 4 be better at handling those types of constantly moving timelines than the current OS is?

SF   Oh absolutely.

Q   Because it seems like that's an issue where you end up in a spot where you don't expect to be.

SF   It will be far better than what it is today because today the app quits. We come back and it has to re-launch, it has to reestablish an IP connection, it has to re-download everything and get to where you were. We think it's better than what we've seen others do in that others, you might not go to it for eight hours an during that eight hours that thing was sitting there grabbing all kinds of, you know, taking every message down that maybe you would look at, maybe you wouldn't, wasting a bunch of battery life and actually making the foreground app sluggish, and so we think that this is a really nice compromise between your battery life and you get back to exactly where you wanted to be. So yeah, we think it's much, much better.

Q   Here's the last quick one. Apple has pioneered sort of glanceable information like widgets and you've avoided widgets, the idea of widgets completely, in this OS. It seems like with the iPad there's a perfect opportunity there for glanceable information on the lock screen, on those home screens where you've got a lot of real estate. Why have you veered away from widgets or the idea of that glanceable information on this platform?

S   We just shipped it on Saturday. [laughter]

Q   But I mean for the iPhone as well.

S   And we rested on Sunday. [laughter]

Q   So widgets are possible then? It may happen is what you are saying.

S   Everything is possible. I wanted to make one other comment on the push notification thing. The push notification has turned out to be the right architecture for a lot of things that really solves the battery life problem and yet wakes up the app at the right time and it's been so successful for us, you saw the numbers—over 10 billion push notifications delivered—that all of our competitors are tripping all over themselves to copy it, you know, because it's absolutely the right architecture and everybody's announced they are doing it now. Yes, ma'am.

Q   Hi. Trisha Duriyea from *Mogo News and Paid Content.* I missed a little bit on the 1 billion ad impressions. Can you kind of go back on the opportunity here and how large mobile advertising is and how you see that?

S   Sure. Just a very simple few statistics linked together. Average iPhone user spends over 30 minutes a day running third party apps. If you put an ad in every 3 minutes, you'd have 10 apps during that 30-minute period per user. We will soon have shipped 100 million iPhones and iPod Touches. That will happen this summer. 100 million times 10 per day is 1 billion ad impressions per day from the iPhone and iPod Touch community. That's where that comes from so there's an opportunity to make 1 billion impressions per day in this community and that is a fairly large number. It's not the largest number in the advertising world but it's a fairly large number and the demographics of iPod

users are probably one of the most desirable in all of advertising. Not just digital advertising. Advertising period. So the feedback we've gotten from the few companies and agencies we've spoken to is this is highly interesting to them and they are very interested.

P   Not to lose sight of the thing that led up to that which is our learning about search versus ads applications is really, I think, a profound thing, that while search is there on the phone and useful, it isn't quite to the level or nearly the level that it is on the desktop because on the phone you want to have applications to help you find things you want to buy on Amazon, apps that help you find travel, apps that help you find restaurants. There's so many great things. You can dive right into what you want that that becomes the customer's way into all that great information and advertisements attached to those are perhaps a much bigger opportunity than advertisements just to attach to generic search. That's our experience.

S   And we've asked our selves a lot: why is it different on the iPhone than it is on desktops and laptops? And I personally think the reason is because these 185,000 apps that get you into every corner of data on the Internet don't exist on PCs. This is a new phenomenon. The iPhone is the first time in history this has ever existed where you've got 185,000 apps and most of them are even free, and the ones that aren't free are just a few bucks. We never had that on the desktop so search was the only way to go find out a lot of things. You know, we have a few on the desktop but nothing like we have now on the phone. We have all these apps and we have a friction-free way to deliver them right to the phone. That's a very new phenomenon and I think that accounts for why the user behavior is so different because this stuff never existed on PCs before. It still doesn't. Sir.

Q   Two questions. **[not miked]** The first one, have you going to begun _____ worldwide _____? **[1:20:13]** And the second one, how do you see all of this working with _____?

S   We do not have any plans to become a worldwide ad agency. Listen, we don't know much about this advertising stuff. We are learning. We tried to buy a company called AdMob, which is the biggest in mobile advertising and Google came in and snatched them from us because they didn't want us to have them and we bought another, much smaller but really good company called Quatro and they are teaching us and we are learning as fast as we can about mobile advertising but we are babes in the woods, so we are learning as fast as we can and we think we've come up with some real contributions that are going to push the state-of-the-art forward. I've never seen ads like you saw today on a mobile platform or on any digital platform. I've never seen anything like this on a desktop in a Web browser. I think we are going to be able to make some real contributions to the industry but we are just starting but we are not going to be an ad agency, no.

Q   _____**[not miked 1:21:31]** the ruling of yesterday _____.

S   I don't think this stuff has anything to do with that.

Q   [inaudible] They can just rule on your app, your apps _____. They can do anything.

S   Again, that's a different discussion from today. In the blue right there, straight ahead. Yeah, you.

Q   Thanks. Harry McCracken with *Technologizer*. Could you talk a little bit about your thinking with compatibility with the earliest devices and how you made that decision and will new apps be able to degrade gracefully or are you expecting it will be a 4.0 world moving forward?

S   Yeah. Let me just say one thing and I'll turn it over to Scott. We didn't make any decisions. There were no decisions to make. Some of the earlier hardware can't support some of the features like multitasking so there was no decision to make there.

SF   As far as degrading, we basically allow a developer to see what the capabilities of a given device are and then enable or disable features accordingly and so that's what we expect people to do. Now there are some games that came out and said they needed OpenGL ES 2 or 2.1 and so they wouldn't work on an older device because that's the hardware they required. Some would actually support both at the same time and they would just load the right one based on the hardware you were running the game on and so it's really up to the developer. We encourage developers to support what makes sense for them.

S   This isn't going to be a problem. It's just that some of the older devices aren't going to support multitasking, one or two other things, that's all.

P   I think unlike some other attempts in this space we've done a really good job trying to make an App Store where the applications run on the widest possible number of devices and customers don't have to be concerned with they are shopping for apps does that work on my device or not? So I think we are very, very sensitive to this and have the best interests of the customer in mind and we are going to continue to try to make that the case where everything runs on the widest number of things possible and it's a really simple model for customers and for developers. We did that with the iPad being able to run iPhone apps.

S   Again, this isn't about apps running or not running. This is about end user features like multitasking. I guess Pandora wouldn't run in the background on some of the older devices but other than a few things like that it's really more of an end user feature that they won't get. Sir, standing up right there.

Q   These phones are getting smarter and they are obviously much more capable. My question to you is we've heard all of this controversy about distracted driving. This certainly could promote that. What are you guys doing, or can you do anything, to make these phones more safe so people won't use them when they ought not be using them?

S   You know, I think we do more than most to connect our phones into car's control systems. We started that with the iPod and have leveraged that into the iPhone and I think that we've done a really great job so that users have hands-free calling, they've got

displays in their car and the controls on the steering wheel controlling their devices, and I think we've probably done a more comprehensive and better job on that than anybody else because of the great momentum and head start that we had with the iPods in cars. What's that?

Q   That's getting even better.

SF   Yeah. We have even more features to enable the connection between the phone, iPod Touch and the car's head end unit and so we feel very strongly about that. We also added voice dialing last year and strive to make that even better and so we feel very strongly you should be able to use it hands-free.

S   Yes, way in the back in the black shirt.

Q   Hi, I'm Helen with the *Financial Times, Germany*. Can you say anything about the revenue opportunity that you see with iAd, if it's going to move the needle for Apple overall?
S   Well, remember that we are giving the majority of the revenue to developers, which is why we are doing this in the first place, so this is not a get rich, quick scheme for Apple. This is a help our developers make money scheme so that they can survive and yet keep the prices of their apps reasonable. Yes, way in the back, black.

Q   Hey, Ryan from GBGT. One thing that we've been seeing on other platforms, namely Palm OS and Android, is the ability to run unsigned applications. Now you have to kind of really dig deep. You have to go into a few menus. You have to really try to enable that feature but you can do it. Is there any plans for you guys to do something like that and why haven't you done it already?

S   You know, there's a porn store for Android that you can go to and it's got nothing but porn apps for your Android phone and you can download them. Your kids can download them. Your kids' friends can download them onto their phones and that's a place where we don't want to go so we are not going to go there. Yes, sir.

Q   Hi, Rich Gerislofski from *Bloomberg Business Week*. I just wanted to ask you, going back to the iPad, now that it's been out and you've had five days of reviews and customer reactions, anything surprise you about the initial reaction so far?

S   Let me take a crack at that and I'm going to turn it over to Phil. You know, again, as I said, even though we've been using these internally for some time, working on it for a few years, you still have butterflies in your stomach. You know, the few weeks before, the night before introduction, launch, because you never really know until you get it in customer's hands and they tell you what they think. And the feedback that we have had has been off the charts. People get it. I mean, we think this is a profound game changer and we think when people look back some number of years from now they will see this as a major event in the history of personal computational devices and what's been really great for me has been how quickly people have got it.

Walt Mossberg's very bright and he spends his day thinking about these things so maybe that's not quite as surprising as the average person getting their hands on this and I've gotten a few thousand e-mails so far from just people I've never talked to

before out there and just telling me how much this product…how much they think this product is going to change their life and what they do. So I think it's been very gratifying. People are getting it very quickly. Phil, do you want to add anything?

P   I agree with all that and I think what's surprised me the most is not that people love it and they get it, we hoped they would, but the speed at which that's happened.

S   Yeah.

P   It's been remarkable with the press, with customers and, in addition, with developers. The quality of the applications, Steven showed you a number of them on the screen today, are remarkable and the developers get it. They are doing incredible things with it and that, then, feeds back to customers and the amazing things they get to do and enjoy with it and we hoped that would happen. We believed it would happen but, as you said, it's been five days and it's happened at a remarkable rate and we just see that continuing. So I think the pace of this is beyond belief.

S   You know, if our competitors ever introduce a competitive product to iPad, you know they will be hoping that they can get 3,500 apps after the first year and we've seen now 3,500 apps in less than a week so it's happening fast and it's because it's standing on top of a lot of things. One of the things it's standing on the shoulders of is, as we've said, there's 85 million people out there who already know how to use it because they've used an iPod Touch or an iPhone so they are just taking to it like a fish in water. Sir, in the back, right straight ahead. Yeah, you.

Q   There is a lot of talk, you didn't mention anything about how the App Store might change. You didn't mention anything about how the App Store might change with 4 and you are talking about how many apps are coming to everything, a tremendous number of apps. Discoverability and organization can be a problem for users. You are getting more and more users as well who might be a more diverse crowd. Do you have any thoughts on how you can improve that experience for developers getting their apps into the right people and people finding the right apps?

S   A few things. Number one is the App Store is not part of iPhone OS 4 or any iPhone release. It actually is a service and it is programmed mostly on the server side so we can enhance it without waiting for a major release of iPhone software or iPad software for that matter, and so we can constantly incrementally improve that. We have to be careful that we don't do something that brings the service down and, of course, if you've noticed, our services, both iTunes and the App Store, have extraordinarily high up times and we are very good at that. So we are constantly interested in improving that and do so fairly frequently.

Now in terms of discoverability, we've added things like Genius and stuff like that, Genius recommendations and things like that, and we'll continue to do stuff but I also see an infrastructure starting to evolve to help users find apps. Remember, the store, especially on an iPhone with the relatively small window into it of that screen, can only do so much but you can start to see more being done by different Web sites and different publications featuring iPhone apps of the week and other things like that and what I see happening is that there's a lot of infrastructure building up outside and around the iPhone through other mediums and through Web sites and other things that

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SF   are accessible by the iPhone that are starting to provide some of that recommendation for users.

SF   Let me add one point is Game Center, part of our goal with that is to help sort of the viral spread of these applications so you can see what applications, what games your friends are playing. You might not have those. Your friends can challenge you to a game you don't have and you can immediately tap to download that which we think is going to be fantastic and, of course, we mentioned that we added gifting in this version of iPhone OS and so if you have an application that you love, you can now give it to someone and we think it will virally spread that way as well.

S   And you saw in iAds that you can…the advertisers can make apps available for free download in the case of Nike ID or purchase in the case of the *Toy Story Mania* example that we used.

P   I also think it's important to keep in perspective that we, I think, are doing more to promote applications than any company in the history of software has. We do TV ads. We do outdoor billboards. We do print ads. We do direct e-mails. We program the store with sections like the featured sections. We've created the Genius section and we are going to continue to do a tremendous amount of marketing support to help developers get attention and focus on all their great software work. And, as Steve said, this is changing every day. We are constantly thinking about it, working on it, taking feedback. Recently developers have asked us to actually help clean up some of the things that are mucking up the top 10 list and top 50 list so they can get better attention on the really great apps and we've done work there. We are going to continually work to improve all of these things so that developers have the best environment for buying and promoting their apps and I think we are doing more than anyone and we are going to continue to.

S   A few more and I think we are going to have to call it a day. Sir, in the tan coat right there. Yeah.

Q   Hi. Rex Crum with *Dow Jones Market Watch.* Steve, I'm wondering if you are concerned at all about the fact that multitasking, you said multitasking and some other features wouldn't work for the older generations of the iPhone and the iPod Touch. Are you concerned about leaving out any significant portion of your customer base or do you believe that this new upgrade will be enough to get them to upgrade their phones and renew their contracts and such?

S   Again, the 3GS has been a huge hit and the iPod Touch also has really…its sales curve really accelerated over the last year so a lot of these products that are out there in the installed base are the most recent products and are just going to love this update. Some of the older ones I think are also going to love the update. They are just going to miss a few features like multitasking and if that's an incentive for them to upgrade to a new phone, that's terrific. Yes, sir.

Q   Troy Wolverton from *The San Jose Mercury News*. I had a clarification question and also just a feature question. The feature question was you showed how to switch applications in multitasking. How do you close applications? And then the clarification question was so you mentioned Game Center and iAd. If app developers want to use an

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alternate platform for social networking or an alternate ad network, are they going to be able to do that or do they have to use iAd and Game Center?

S   The answer to your second question is yes, they are going to be able to do that in both cases and the first question, if you want to kill an app. You don't have to.

SF   You don't have to. The real answer there is we tried to architect something, we did architect something where the user doesn't need to be the custodian of the applications. We do that for them and so all these applications run. We put them in a quiescence state if they don't need any resources in the background and we'll give the apps that are in the foreground more resources as needed and so the user really doesn't have to worry about that at all, which is fantastic. I think that's part of why we created these services that are very rich and very powerful so the user just uses things and doesn't ever have to worry about that.

S   See, it's like we said on the iPad. If you see a stylus, it's the wrong product, right? If you see a stylus, they blew it. In multitasking if you see a task manager, they blew it. If the user has to use a task manager to manage which applications are running in the background and which aren't, they blew it. Users shouldn't have to ever, ever, ever think about that stuff. That's our philosophy anyway.

        All rightie. Well thank you very much. We really appreciate your coming this morning. I hope we've answered most of your questions and if you are a developer, as well as a journalist, please get your hands on the beta release of iPhone 4. Thanks. [applause]

[Recording ends at 1:38:40]